

Infection Control Risk Assessment Matrix of Precautions for Construction & Renovation

Step 1: Using the following table, *identify* the type of Construction Project Activity (A-D)

Type A	<p style="text-align: center;">Inspection and Non-Invasive Activities</p> <p>Includes, but is not limited to:</p> <ul style="list-style-type: none"> • Removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feet. • Painting (but not sanding) • Wallcovering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings or other than for visual inspection.
Type B	<p style="text-align: center;">Small scale, short duration activities which create minimal dust</p> <p>Includes, but is not limited to:</p> <ul style="list-style-type: none"> • Installation of telephone and computer cabling • Access to chase spaces • Cutting of walls or ceiling where dust migration can be controlled
Type C	<p style="text-align: center;">Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies</p> <p>Includes, but is not limited to:</p> <ul style="list-style-type: none"> • Sanding of walls for painting or wall covering • Removal of floor coverings, ceiling tiles and casework • New wall construction • Minor duct work or electrical work above ceilings • Major cabling activities • Any activity which cannot be completed within a single workshift
Type D	<p style="text-align: center;">Major demolition and construction projects</p> <p>Includes, but is not limited to:</p> <ul style="list-style-type: none"> • Activities which require consecutive work shifts • Requires heavy demolition or removal of a complete cabling system • New construction

Note: Reference: "www.icanprevent.com"

Step 2: Using the following table, *identify the Patient Risk Groups* that will be affected. If more than one risk group will be affected, select the higher risk group:

Low Risk	Medium Risk	High Risk	Highest Risk
<ul style="list-style-type: none"> Office areas 	<ul style="list-style-type: none"> Cardiology Echocardiography Endoscopy Nuclear Medicine Physical Therapy Radiology/MRI Respiratory Therapy 	<ul style="list-style-type: none"> CCU Emergency Room Labor & Delivery Laboratories (specimen) Outpatient Surgery Pharmacy Post-Anesthesia Care Unit Surgical Units 	<ul style="list-style-type: none"> Any area caring for immunocompromised patients Burn Unit Transplant Unit Cardiac Cath Lab Central Sterile Supply Intensive Care Units Medical Unit Negative pressure isolation rooms Oncology Operating rooms

Step 3: Match the Patient Risk Group (low, medium, high, highest) with the planned **Construction Project Type** (A, B, C, D) on the IC Matrix to find the **Class of Precautions** (I, II, III, IV) or level of infection control activities required.

IC Matrix: Class of Precautions for Construction Projects by Patient Risk

Patient Risk Group	Type A	Type B	Type C	Type D
LOW Risk Group	I	II	II	III/IV
MEDIUM Risk Group	I	II	III	IV
HIGH Risk Group	I	II	III/IV	IV
HIGHEST Risk Group	II	III/IV	III/IV	IV

Note: Infection Control approval will be required when the Construction Activity and Risk Level indicates that **Class III** or **Class IV** control procedures are necessary. Coordinate with the Resident Engineer.

Description of Required Infection Control Precautions by Class

During Construction Project		Upon Completion of Project
Class I	<ol style="list-style-type: none"> 1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace a ceiling tile displaced for visual inspection. 	<ol style="list-style-type: none"> 1. Wipe work surfaces with disinfectant.
Class II	<ol style="list-style-type: none"> 1. Provide active means to prevent airborne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place dust mat at entrance and exit of work area. 6. Remove or isolate HVAC system in areas where work is being performed. 	<ol style="list-style-type: none"> 1. Wipe work surfaces with disinfectant. 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area. 4. Remove isolation of HVAC system in areas where work is being performed.
Class III	<ol style="list-style-type: none"> 1. Remove or isolate HVAC system in areas where work is being done to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheet rock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum or vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 4. Contain construction waste before transport in tightly covered containers. 5. Cover transport receptacles or carts. Tape covering unless solid lid. 6. Wet mop area outside barrier with disinfectant daily or more often as directed by the Resident Engineer. 7. Use sticky mat on both sides of the entrance/exit door. Tear off pad at least once daily and more often as they become dirty or as directed by the Resident Engineer. 8. Post the ICRA Permit on the ICRA barrier (visible from the outside of the area). 	<ol style="list-style-type: none"> 1. Do not remove barriers from work area until completed project is inspected by the Resident Engineer and thoroughly cleaned/disinfected by the contractor 2. Do not remove barriers from work area until completed project is inspected by the owner's Safety Department and Infection Control Department and thoroughly cleaned by the owner's Environmental Services Department. 3. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 4. Vacuum work area with HEPA filtered vacuums. 5. Wet mop area with disinfectant. 6. Remove isolation of HVAC system in areas where work is being performed.

Class IV	<ol style="list-style-type: none"> 1. Remove or isolate HVAC system in areas where work is being done to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum or vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 4. Seal holes, pipes, conduits, and punctures appropriately. 5. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site. 6. All personnel entering work site area required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area. 7. Wet mop area outside barrier with disinfectant daily or more often as directed by the Resident Engineer. 8. Use sticky mat on both sides of the entrance/exit door. Tear off pad at least once daily and more often as they become dirty or as directed by the Resident Engineer. 9. Post the ICRA Permit on the ICRA barrier (visible from the outside of the area). 	<ol style="list-style-type: none"> 1. Do not remove barriers from work area until completed project is inspected by the Resident Engineer and thoroughly cleaned/disinfected by the contractor 2. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction. 3. Contain construction waste before transport in tightly covered containers. 4. Cover transport receptacles or carts. Tape covering unless solid lid. 5. Vacuum work area with HEPA filtered vacuums. 6. Wet mop area with disinfectant. 7. Remove isolation of HVAC system in areas where work is being performed.
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Adapted with permission of Virginia Kennedy and Bonnie Barnard, St. Luke's Episcopal Hospital, Huston, TX, www.icanprevent.com.

Work Area Classifications for Research Office Building #30

3rd Floor Connection to B#1 = Class IV
Basement Connection to B#1 = Class IV

Basement B#1 = Class 4
3 FL B#1 = Class 4
4 FL B#1 = Class 4
5 FL B#1 = Class 4

**Infection Control Orientation**

The goal of the Infection Control program is to identify and reduce the risks of acquiring and transmitting infections among patients, employees, physicians, and other licensed independent practitioners, contract service workers, volunteers, students, and visitors.

During construction, renovation and minor improvement projects, hidden infectious disease hazards may be released into the air, carried on dust particles or on clothing – for example, fungal organisms such as, *Aspergillus*. *Aspergillus* species may be found in decaying leaves and compost, plaster and drywall, and settled dust. These organisms usually do not cause problems in healthy people, but a hospital is full of sick patients! *Aspergillus* and other fungal organisms can cause illness and even death in transplant patients, cancer treatment patients, and patients with lung problems or poor immunity. Therefore, it is critical that you do your part to keep our patients, employees, and visitors as safe and healthy as possible. We, in turn, will make conditions as safe as possible for you.

1. **Medical Waste:**
 - a. VAMC will remove any medical waste, including sharps containers (for used needles and syringes), from construction areas prior to the start of the projects.
 - b. If you find any needles, syringes, sharp medical objects, please notify the Resident Engineer **IMMEDIATELY**.
2. **Barrier Walls:**
 - a. The construction areas **MUST** be kept separated from patient care areas by barriers that keep the dust and dirt inside the worksite.
 - b. The walls must provide a complete seal of the construction area from adjacent areas (walls may be rigid or 4 or 6 mil thickness noncombustible, flame retardant plastic) and from floor slab to deck above.
3. **Environmental Control:**

- a. Negative air pressure must be maintained within the construction area.
 - b. Demolition debris is removed in tightly fitted covered carts – use specified traffic patterns.
 - c. Sticky or walk-off mats are placed immediately outside the construction zone and changed whenever necessary to control the spread of dust and dirt.
 - d. Exterior window seals are to be used to reduce the amount of outside excavation debris coming into the building.
 - e. If demolition chutes are used, they must be sealed when not in use; the chute and damper should be sprayed with water, as necessary to maintain dust control.
 - f. Control, collection and disposal must be provided for any drain liquid or sludge found when demolishing plumbing.
4. Traffic Control:
- a. Use designated entry and exit procedures.
 - b. Keep all egress pathways free of debris.
 - c. No unauthorized personnel should be allowed to enter construction areas.
 - d. Use designated elevators only.
5. Cleaning:
- a. Keep the construction area clean on a daily basis as required.
 - b. Dust and dirt **must** be kept to a minimum.
6. Workers:
- a. Clothing must be free of loose soil and debris when exiting the construction area.
 - b. Use personal protective equipment (masks, face shields, etc.) as indicated for the task at hand.
 - c. Hand washing is the best method of reducing the transmission of infection: always wash your hands with soap and water after visiting the restroom, before eating, when leaving the construction site.